tion contra-indicates this course. The creation of a means of escape for the urine above the obstruction greatly enlarges the field of action. Access to the renal pelvis is to be obtained by an incision through the convexity of the kidney. This operation, being so simple and free from danger, is to be preferred to ureterotomy or pyelotomy, unless the location of the calculus has been accurately determined. Calculi are usually arrested at the mouth of the ureter, or at its upper extremity. In this way nephrotomy often becomes curative, as it permits of the extraction of the offending calculi, either directly or by pushing from below upward or from above downward, or by retrograde catheterism of the ureter. Of six cases of calculous anuria treated by nephrotomy, two terminated fatally on account of a too tardy intervention. The four remaining cases were cured. The urine began to escape by the lumbar opening immediately after operation, and resumed the natural course in from one to thirty-five days, the calculus having fallen into the bladder. The large incision into the kidney for calculous anuria is justified by the pathological physiology.

The Effect of Iodoform on the Tissues.

L. v. Stubenrauch has recently completed an exhaustive experimental study on this subject (*Deutsche Zeitschrift für Chirurgie*, 1893, B. xxxvii., Hefte 5 u. 6). The investigation was suggested by the very frequent use of iodoform in local tuberculous affections and the good results so frequently observed. Many writers hold that the effects noted in these cases are due to the anti-bacillary action of the drug, by which the tubercle bacilli are destroyed. The effect of the iodoform on the tissues had not been studied, however, and Stubenrauch therefore determined upon the work of which this communication is the outcome.

The effect of iodoform upon the different tissues of the body, both normal and pathological, were carefully investigated. Observations upon man have been compared with similar experiments on animals.

The work is divided into four parts: 1. Historical; 2. Bacteriological; 3. Chemical; and 4. Histological.

The author arrives at the following conclusions:

1. Iodoform is not an antiseptic in the true sense of the term, as is corrosive sublimate, inasmuch as it does not destroy bacteria by short contact. The investigations heretofore made upon several different bacteria have shown that iodoform only inhibited the growth of milzbrand and tubercle bacilli.

Iodoform probably possesses no specific anti-tuberculous effect. Experiments on pure cultures of tubercle bacilli have repeatedly shown that when the iodoform remained in contact for a long time the growth was arrested, but it was not possible to destroy the vitality or growth of fully virulent tubercle bacilli by contact with iodoform in the animal body.

The favorable results which follow the iodoform treatment in cases of chronic tuberculous abscesses must not be taken as unconditional proof of the specific anti-tuberculous (anti-bacterial) effect of iodoform. The bacilli which are contained in tuberculous abscesses die under the influence of iodoform, but it is not proven that the destructive effect is primarily due to the iodoform; there is a greater probability that the effect of the latter on the tissues, in connection with the experimentally proved slight anti-bacterial effect, has caused the destruction of the bacilli. Iodoform interferes with bacterial growth—if ever—in the undecomposed as well as in the decomposed condition.

2. The decomposition of iodoform can take place outside of the body as well as inside.

a. In solutions (ether, alcohol, or oil) or mixtures (water, gum, or glycerin) which are exposed to the sunlight. In the mixtures, decomposition of iodoform takes place in a warm place even if light be excluded, the rapidity depending upon the degree of the temperature. The effect of live steam on iodoform mixtures or emulsions is to separate certain quantities of iodine (and hydriodate) and form new compounds, or they remain free, according to the nature of the different organic substances which are present. The quantity of iodine which becomes liberated from iodoform at 98° or 100° is according to the nature of the several vehicles, and the greater or less excess of air, but is independent of the form of the preparation. Considerable decomposition takes place in iodoform by the heat of live steam in glycerin.

b. Iodoform is further decomposed outside of the body by the liberation of hydrogen, and further through reducing substances—as, for example, powdered zinc, silver—and also through neutral nitrate of soda (with the addition of heat), and finally through the products of the bacteria (ptomaïnes). Inside of the body there is decomposition of iodoform in considerable degree, especially in wounds in which there is active reduction (and where ptomaïnes are also present), in the cellular tissue under the skin, in the intestinal tract, the great cavities of the body, etc. With the albumin of the tissue juices the iodoform unites to form iodalbumin, which when liquid may be absorbed; if not, it decomposes further. The iodoform leaves the body in the form of soluble combination. The local as well as the general effect of the iodoform is a protracted iodine effect.

3. Iodoform acts on the tissues of the body, however, only if it is decomposed. Locally as well as from the blood it acts on glandular organs to such a degree that degenerative decay of the epithelial elements takes place. In this way the local application of iodoform to the kidney produces a degeneration (fatty) in the epithelium, and also a decay (fatty) of the cells in the kidney, liver, and other organs, if the iodoform has produced a general effect. All pathological new formations are influenced in a high degree by iodoform. Iodoform stops the formation of giant cells in the tissues in the neighborhood of a foreign body.

In serous cavities it causes coagulation of albumin, which, if the conditions of absorption are favorable, soon disappears. If the iodoform becomes decomposed and if certain products of decomposition remain for a long time in the cavity in consequence of unfavorable conditions of absorption, as in hydrocele, etc., then these (products of decomposition) are capable of causing an inflammation in the walls of the cavity. The effect of this is a transudation which coagulates, becomes organized, and cure results by the formation of connective tissue.

On tuberculous tissue iodoform acts probably by hastening the decay of the epithelioid cell collections which are destined to degeneration, while the more resistant of the epithelial elements is prepared for a change into healthy tissue.

ECHINOCOCCUS IN THE SAC OF A HERNIA.

KOSLOWSKI reported in the *Chir. Annalen*, 1893, p. 609 (*Centralblatt für Chirurgie*, 1894, No. 10), the following case: A man, thirty-four years of age, a blacksmith, applied for advice on account of a tumor in the groin which appeared on the previous day. The man had previously complained of undefined pains in the abdomen. On examination, a tumor as large as a small hen's egg was seen below Poupart's ligament. It was smooth, hard, flat on percussion, and its origin could be traced back into the inguinal canal. The patient said the swelling had frequently appeared before. This he reduced himself by pouring a little alcohol in a saucer, lighting it, and lying down by the flame, so that the tumor became warm. On this occasion this procedure failed. Strangulated inguinal hernia was suspected, and taxis attempted under ether. This failing, operation was performed the following morning. On cutting down, a vascular layer of fat presented which much resembled omentum. To clear up the matter, the sac was dissected free, with some trouble, and incised. The incision into the wall of the sac revealed a cyst as large as a pigeon's egg, a smaller cyst adjoining. The cyst proved to be echinococcus. A small mass of omentum was found and reduced. The neck of the sac was ligated and removed. The patient left the hospital on the twenty-sixth day, well. The author supposes that the echinococcus formed in the omentum.

OTOLOGY.

UNDER THE CHARGE OF

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THREE CASES OF UNINTENTIONAL OPENING OF THE LATERAL SINUS.

DR. J. E. SHEPPARD, of Brooklyn, N. Y., in the *Archives of Otology*, vol. xxii. No. 3, gives an account of three cases of unintentional opening of the lateral sinus. In the first case there seems to have been entire absence of a bony wall between the mastoid and cranial cavities. By the perforation of a membranous diaphragm between these cavities a hemorrhage occurred. In the second case the flow of blood came after removing a pledget of cotton used for drying-out the cavity. It seems probable that with the curette a piece of necrotic bone was made to wound the sinus wall, but was not sufficiently displaced to allow of hemorrhage until the cotton was removed. There were no disturbing symptoms, and the wound healed entirely in a comparatively short time. In the third case, the author says, it is difficult to explain how the sinus was opened. He suggests, as an explanation, that the curette may have splintered the inner plate, the posterior end of the splinter penetrating the sinus wall.